



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 5/29/2018
Subject: Review of Region 5 Data for Central Sands
To: Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago, IL 60604
From: Amanda Wroble, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

A handwritten signature in cursive script that reads "Amanda Wroble". The signature is written in dark ink and is positioned above a horizontal line.

Please contact the analyst with any technical report issues, Robert Thompson at (312)-353-9078 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Central Sands

Analyses included in this report:

Metals ICP-AES (w)

Report Name: 1805005 Metals ICP-AES (w) FINAL May 29 18 1055



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Accredited Analyses included in this Report



Method: EPA 200.7 in Water
Analysis: Metals ICP-AES (w)

Analyte	Certifications
Aluminum	ISO/IEC 17025:2005
Aluminum hi	ISO/IEC 17025:2005
Antimony	ISO/IEC 17025:2005
Arsenic	ISO/IEC 17025:2005
Barium	ISO/IEC 17025:2005
Beryllium	ISO/IEC 17025:2005
Boron	ISO/IEC 17025:2005
Cadmium	ISO/IEC 17025:2005
Calcium	ISO/IEC 17025:2005
Chromium	ISO/IEC 17025:2005
Cobalt	ISO/IEC 17025:2005
Copper	ISO/IEC 17025:2005
Iron	ISO/IEC 17025:2005
Iron hi	ISO/IEC 17025:2005
Lead	ISO/IEC 17025:2005
Lithium	ISO/IEC 17025:2005
Magnesium	ISO/IEC 17025:2005
Magnesium hi	ISO/IEC 17025:2005
Manganese	ISO/IEC 17025:2005
Molybdenum	ISO/IEC 17025:2005
Nickel	ISO/IEC 17025:2005
Potassium	ISO/IEC 17025:2005
Selenium	ISO/IEC 17025:2005
Silver	ISO/IEC 17025:2005
Sodium	ISO/IEC 17025:2005
Strontium	ISO/IEC 17025:2005



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Method: EPA 200.7 in Water
Analysis: Metals ICP-AES (w)
Analyte

Certifications

Thallium	ISO/IEC 17025:2005
Tin	ISO/IEC 17025:2005
Titanium	ISO/IEC 17025:2005
Vanadium	ISO/IEC 17025:2005
Zinc	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

ANALYSIS CASE NARRATIVE

GENERAL INFORMATION

CRL received water samples for trace metals analysis by inductively coupled plasma-atomic emission spectroscopy (ICP-AES). The assigned work order(s) and sample numbers to which this narrative applies are listed below:

Work Order (number of samples)	Batch Number
1805005 (54)	B18E013, B18E014, B18E015

The designated analyst for these samples, Amanda Wroble, can be reached at 312.353.0375. All holding times were met.

Many of samples arrived at CRL underpreserved. Therefore, 1:1 nitric acid was added to each affected sample to pH < 2. At least 24 hours elapsed before subsampling began. Per pen & ink – 14097, the samples were not homogenized before subsampling. The samples were digested using CRL SOP METALS025, Rev. 3 (EPA Method 200.2) and analyzed using CRL SOP METALS003A, Rev. 4 (EPA Method 200.7/SW-846 Method 6010D).

SAMPLE ANALYSIS AND RESULTS

The data reported herein meet the requirements referenced in the SOP used for analysis and any laboratory specifications stated in the *Quality Assurance Project Plan/Sampling Plan for Environmental Compliance Assessment for Central Sands*, dated April 2018.

Calcium and nickel results were reported over two analytical runs due to quality control audit failures within each run.

QUALITY CONTROL

All quality control audits that bracketed samples to which this narrative applies and the run in which a specific sample/analyte was reported were within CRL limits for the requested analytes or did not result in qualification of the data.



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Reported:
May-29-18 10:55

Laboratory Control Solution Measured (HiLCM): Recovery Limit = $100 \pm 10\%$. Run 1 calcium HiLCM #6 was outside the audit limit with a recovery of 89.4%. Bracketing calcium results that were reported from Run 1 (1805005-34 thru -36) were flagged "L" for potential low bias.

Laboratory Duplicate (DUP): Relative Percent Difference (RPD) Limit $\leq 20\%$. Titanium RPDs for B18E013-DUP1 (26.2%) and B18E013-DUP2 (24.8%) were outside the duplicate RPD limit. The titanium results for their source samples 1805005-05 and 1805005-11 were flagged "J" for imprecision.

Matrix Spike (MS): Recovery Limit = $100 \pm 25\%$. Titanium recovery for B18E014-MS1 (128%) and copper recovery for B18E015-MS1 (129%) were outside the matrix spike audit limit. The copper result for source sample 1805005-41 was flagged "K" for potential high bias.

The titanium result for source sample 1805005-21 was flagged "J" for imprecision based on an elevated but acceptable RPD for B18E014-DUP1 (20.0%) in addition to the high matrix spike recovery. A similar trend (RPD failure and elevated but acceptable matrix spike recovery) is noted for the titanium duplicate excursions mentioned above.



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Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER

Printed: 5/3/2018 3:33:25PM

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
Project Number: **[none]**

Report To:

Cheryl Burdett
Water Division, WECA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: (312) 886-1463
Fax: (312) 886-2001

Date Due: Jun-04-18 15:00 (32 day TAT)

Received By: Colin Breslin

Date Received: May-02-18 09:55

Logged In By: Robert Snyder

Date Logged In: May-03-18 09:30

Samples Received at:

Sample tags/labels **Yes**
Seals Intact **Yes**
Received on ice **Yes**
Paperwork Included **Yes**

Work Order Comments:

Anions: Chloride and nitrate as NO3
Full List metals

Sample ID: **1805005-01** Sampled: **Apr-30-18 07:19** Matrix: **Water**

Sample Name: **A1a**

Sample Location/Comments: **1st Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 07:19	pH = 2
Anions by IC	28	May-28-18 07:19	pH = 7
Metals ICP-AES (w)	180	Oct-27-18 07:19	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 07:19	pH = 2
Solids, TDS	7	May-07-18 07:19	pH = 7
TKN DA	28	May-28-18 07:19	pH = 2
TOC	28	May-28-18 07:19	pH = 2
Total Phosphorus DA	28	May-28-18 07:19	pH = 2

Sample ID: **1805005-02** Sampled: **Apr-30-18 07:32** Matrix: **Water**

Sample Name: **A1b**

Sample Location/Comments: **1st Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 07:32	pH = 2
Anions by IC	28	May-28-18 07:32	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 07:32	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 07:32	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-02** Sampled: **Apr-30-18 07:32** Matrix: **Water**

Sample Name: **A1b**

Sample Location/Comments: **1st Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Solids, TDS	7	May-07-18 07:32	pH = 5
TKN DA	28	May-28-18 07:32	pH = 2
TOC	28	May-28-18 07:32	pH = 2
Total Phosphorus DA	28	May-28-18 07:32	pH = 2

Sample ID: **1805005-03** Sampled: **Apr-30-18 08:15** Matrix: **Water**

Sample Name: **A2a**

Sample Location/Comments: **22nd Avenue North**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 08:15	pH = 2
Anions by IC	28	May-28-18 08:15	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 08:15	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 08:15	pH = 2
Solids, TDS	7	May-07-18 08:15	pH = 6
TKN DA	28	May-28-18 08:15	pH = 2
TOC	28	May-28-18 08:15	pH = 2
Total Phosphorus DA	28	May-28-18 08:15	pH = 2

Sample ID: **1805005-04** Sampled: **Apr-30-18 08:24** Matrix: **Water**

Sample Name: **A2b**

Sample Location/Comments: **22nd Avenue North**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 08:24	pH = 2
Anions by IC	28	May-28-18 08:24	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 08:24	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 08:24	pH = 2
Solids, TDS	7	May-07-18 08:24	pH = 6
TKN DA	28	May-28-18 08:24	pH = 2
TOC	28	May-28-18 08:24	pH = 2
Total Phosphorus DA	28	May-28-18 08:24	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-05** Sampled: **Apr-30-18 09:06** Matrix: **Water** *QC Source Sample MS/MSD*

Sample Name: **A3a** Sample Location/Comments: **2nd Street**

Sample Comments: **MS/MSD**

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:06	pH = 2
Anions by IC	28	May-28-18 09:06	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:06	pH = 2
Solids, TDS	7	May-07-18 09:06	pH = 6
TKN DA	28	May-28-18 09:06	pH = 2
TOC	28	May-28-18 09:06	pH = 2
Total Phosphorus DA	28	May-28-18 09:06	pH = 2

Sample ID: **1805005-06** Sampled: **Apr-30-18 09:14** Matrix: **Water**

Sample Name: **A3b** Sample Location/Comments: **2nd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:14	pH = 2
Anions by IC	28	May-28-18 09:14	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:14	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:14	pH = 2
Solids, TDS	7	May-07-18 09:14	pH = 6
TKN DA	28	May-28-18 09:14	pH = 2
TOC	28	May-28-18 09:14	pH = 2
Total Phosphorus DA	28	May-28-18 09:14	pH = 2

Sample ID: **1805005-07** Sampled: **Apr-30-18 09:38** Matrix: **Water**

Sample Name: **A4 Equip** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:38	pH = 2
Anions by IC	28	May-28-18 09:38	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 09:38	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:38	pH = 2
Solids, TDS	7	May-07-18 09:38	pH = 5
TKN DA	28	May-28-18 09:38	pH = 2
TOC	28	May-28-18 09:38	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-07** Sampled: **Apr-30-18 09:38** Matrix: **Water**

Sample Name: **A4 Equip** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 09:38	pH = 2

Sample ID: **1805005-08** Sampled: **Apr-30-18 09:06** Matrix: **Water**

Sample Name: **A3a (Dup)** Sample Location/Comments: **2nd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:06	pH = 2
Anions by IC	28	May-28-18 09:06	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:06	pH = 2
Solids, TDS	7	May-07-18 09:06	pH = 6
TKN DA	28	May-28-18 09:06	pH = 2
TOC	28	May-28-18 09:06	pH = 2
Total Phosphorus DA	28	May-28-18 09:06	pH = 2

Sample ID: **1805005-09** Sampled: **Apr-30-18 09:49** Matrix: **Water**

Sample Name: **FB1** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:49	pH = 2
Anions by IC	28	May-28-18 09:49	pH = 4
Metals ICP-AES (w)	180	Oct-27-18 09:49	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:49	pH = 2
Solids, TDS	7	May-07-18 09:49	pH = 4
TKN DA	28	May-28-18 09:49	pH = 2
TOC	28	May-28-18 09:49	pH = 2
Total Phosphorus DA	28	May-28-18 09:49	pH = 2

Sample ID: **1805005-10** Sampled: **Apr-30-18 09:58** Matrix: **Water**

Sample Name: **A4a** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:58	pH = 2
Anions by IC	28	May-28-18 09:58	pH = 6

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-10** Sampled: **Apr-30-18 09:58** Matrix: **Water**

Sample Name: **A4a** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-27-18 09:58	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:58	pH = 2
Solids, TDS	7	May-07-18 09:58	pH = 6
TKN DA	28	May-28-18 09:58	pH = 2
TOC	28	May-28-18 09:58	pH = 2
Total Phosphorus DA	28	May-28-18 09:58	pH = 2

Sample ID: **1805005-11** Sampled: **Apr-30-18 10:09** Matrix: **Water**

Sample Name: **A4b** Sample Location/Comments: **Cranberry Rock Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:09	pH = 2
Anions by IC	28	May-28-18 10:09	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:09	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:09	pH = 2
Solids, TDS	7	May-07-18 10:09	pH = 5
TKN DA	28	May-28-18 10:09	pH = 2
TOC	28	May-28-18 10:09	pH = 2
Total Phosphorus DA	28	May-28-18 10:09	pH = 2

Sample ID: **1805005-12** Sampled: **Apr-30-18 10:51** Matrix: **Water**

Sample Name: **B1a** Sample Location/Comments: **20th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:51	pH = 3
Anions by IC	28	May-28-18 10:51	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:51	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:51	pH = 3
Solids, TDS	7	May-07-18 10:51	pH = 5
TKN DA	28	May-28-18 10:51	pH = 3
TOC	28	May-28-18 10:51	pH = 3
Total Phosphorus DA	28	May-28-18 10:51	pH = 3

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-13** Sampled: **Apr-30-18 10:58** Matrix: **Water**

Sample Name: **B1b** Sample Location/Comments: **20th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:58	pH = 2
Anions by IC	28	May-28-18 10:58	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:58	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:58	pH = 2
Solids, TDS	7	May-07-18 10:58	pH = 5
TKN DA	28	May-28-18 10:58	pH = 2
TOC	28	May-28-18 10:58	pH = 2
Total Phosphorus DA	28	May-28-18 10:58	pH = 2

Sample ID: **1805005-14** Sampled: **Apr-30-18 11:40** Matrix: **Water**

Sample Name: **B2a** Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 11:40	pH = 2
Anions by IC	28	May-28-18 11:40	pH = 7
Metals ICP-AES (w)	180	Oct-27-18 11:40	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 11:40	pH = 2
Solids, TDS	7	May-07-18 11:40	pH = 7
TKN DA	28	May-28-18 11:40	pH = 2
TOC	28	May-28-18 11:40	pH = 2
Total Phosphorus DA	28	May-28-18 11:40	pH = 2

Sample ID: **1805005-15** Sampled: **Apr-30-18 11:48** Matrix: **Water**

Sample Name: **B2b** Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 11:48	pH = 2
Anions by IC	28	May-28-18 11:48	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 11:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 11:48	pH = 2
Solids, TDS	7	May-07-18 11:48	pH = 5
TKN DA	28	May-28-18 11:48	pH = 2
TOC	28	May-28-18 11:48	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-15** Sampled: **Apr-30-18 11:48** Matrix: **Water**

Sample Name: **B2b**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 11:48	pH = 2

Sample ID: **1805005-16** Sampled: **Apr-30-18 12:29** Matrix: **Water**

Sample Name: **B3a**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 12:29	pH = 2
Anions by IC	28	May-28-18 12:29	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 12:29	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 12:29	pH = 2
Solids, TDS	7	May-07-18 12:29	pH = 6
TKN DA	28	May-28-18 12:29	pH = 2
TOC	28	May-28-18 12:29	pH = 2
Total Phosphorus DA	28	May-28-18 12:29	pH = 2

Sample ID: **1805005-17** Sampled: **Apr-30-18 12:36** Matrix: **Water**

Sample Name: **B3b**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 12:36	pH = 2
Anions by IC	28	May-28-18 12:36	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 12:36	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 12:36	pH = 2
Solids, TDS	7	May-07-18 12:36	pH = 5
TKN DA	28	May-28-18 12:36	pH = 2
TOC	28	May-28-18 12:36	pH = 2
Total Phosphorus DA	28	May-28-18 12:36	pH = 2

Sample ID: **1805005-18** Sampled: **Apr-30-18 13:10** Matrix: **Water**

Sample Name: **B4a**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 13:10	pH = 2
Anions by IC	28	May-28-18 13:10	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-18** Sampled: **Apr-30-18 13:10** Matrix: **Water**

Sample Name: **B4a**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-27-18 13:10	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 13:10	pH = 2
Solids, TDS	7	May-07-18 13:10	pH = 5
TKN DA	28	May-28-18 13:10	pH = 2
TOC	28	May-28-18 13:10	pH = 2
Total Phosphorus DA	28	May-28-18 13:10	pH = 2

Sample ID: **1805005-19** Sampled: **Apr-30-18 13:41** Matrix: **Water**

Sample Name: **B4b**

Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 13:41	pH = 2
Anions by IC	28	May-28-18 13:41	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 13:41	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 13:41	pH = 2
Solids, TDS	7	May-07-18 13:41	pH = 5
TKN DA	28	May-28-18 13:41	pH = 2
TOC	28	May-28-18 13:41	pH = 2
Total Phosphorus DA	28	May-28-18 13:41	pH = 2

Sample ID: **1805005-20** Sampled: **Apr-30-18 15:02** Matrix: **Water**

Sample Name: **C1a**

Sample Location/Comments: **2nd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 15:02	pH = 2
Anions by IC	28	May-28-18 15:02	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 15:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 15:02	pH = 2
Solids, TDS	7	May-07-18 15:02	pH = 5
TKN DA	28	May-28-18 15:02	pH = 2
TOC	28	May-28-18 15:02	pH = 2
Total Phosphorus DA	28	May-28-18 15:02	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-21** Sampled: **Apr-30-18 15:27** Matrix: **Water**

Sample Name: **C1b**

Sample Location/Comments: **2nd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 15:27	pH = 2
Anions by IC	28	May-28-18 15:27	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 15:27	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 15:27	pH = 2
Solids, TDS	7	May-07-18 15:27	pH = 5
TKN DA	28	May-28-18 15:27	pH = 2
TOC	28	May-28-18 15:27	pH = 2
Total Phosphorus DA	28	May-28-18 15:27	pH = 2

Sample ID: **1805005-22** Sampled: **Apr-30-18 16:06** Matrix: **Water**

Sample Name: **C2a**

Sample Location/Comments: **Nelson Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 16:06	pH = 2
Anions by IC	28	May-28-18 16:06	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 16:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 16:06	pH = 2
Solids, TDS	7	May-07-18 16:06	pH = 5
TKN DA	28	May-28-18 16:06	pH = 2
TOC	28	May-28-18 16:06	pH = 2
Total Phosphorus DA	28	May-28-18 16:06	pH = 2

Sample ID: **1805005-23** Sampled: **Apr-30-18 16:14** Matrix: **Water**

Sample Name: **C2b**

Sample Location/Comments: **Nelson Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 16:14	pH = 2
Anions by IC	28	May-28-18 16:14	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 16:14	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 16:14	pH = 2
Solids, TDS	7	May-07-18 16:14	pH = 5
TKN DA	28	May-28-18 16:14	pH = 2
TOC	28	May-28-18 16:14	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-23** Sampled: **Apr-30-18 16:14** Matrix: **Water**

Sample Name: **C2b** Sample Location/Comments: **Nelson Road**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 16:14	pH = 2

Sample ID: **1805005-24** Sampled: **Apr-30-18 14:16** Matrix: **Water**

Sample Name: **C3a** Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 14:16	pH = 2
Anions by IC	28	May-28-18 14:16	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 14:16	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 14:16	pH = 2
Solids, TDS	7	May-07-18 14:16	pH = 5
TKN DA	28	May-28-18 14:16	pH = 2
TOC	28	May-28-18 14:16	pH = 2
Total Phosphorus DA	28	May-28-18 14:16	pH = 2

Sample ID: **1805005-25** Sampled: **Apr-30-18 14:26** Matrix: **Water**

Sample Name: **C3b** Sample Location/Comments: **3rd Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 14:26	pH = 2
Anions by IC	28	May-28-18 14:26	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 14:26	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 14:26	pH = 2
Solids, TDS	7	May-07-18 14:26	pH = 5
TKN DA	28	May-28-18 14:26	pH = 2
TOC	28	May-28-18 14:26	pH = 2
Total Phosphorus DA	28	May-28-18 14:26	pH = 2

Sample ID: **1805005-26** Sampled: **May-01-18 06:29** Matrix: **Water**

Sample Name: **C5Aa** Sample Location/Comments: **CR G (Nelson Road)**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 06:29	pH = 2
Anions by IC	28	May-29-18 06:29	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: 1805005-26 Sampled: May-01-18 06:29 Matrix: Water

Sample Name: C5Aa Sample Location/Comments: CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 06:29	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 06:29	pH = 2
Solids, TDS	7	May-08-18 06:29	pH = 5
TKN DA	28	May-29-18 06:29	pH = 2
TOC	28	May-29-18 06:29	pH = 2
Total Phosphorus DA	28	May-29-18 06:29	pH = 2

Sample ID: 1805005-27 Sampled: May-01-18 06:43 Matrix: Water

Sample Name: C5Ab Sample Location/Comments: CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 06:43	pH = 2
Anions by IC	28	May-29-18 06:43	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 06:43	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 06:43	pH = 2
Solids, TDS	7	May-08-18 06:43	pH = 5
TKN DA	28	May-29-18 06:43	pH = 2
TOC	28	May-29-18 06:43	pH = 2
Total Phosphorus DA	28	May-29-18 06:43	pH = 2

Sample ID: 1805005-28 Sampled: May-01-18 07:06 Matrix: Water

Sample Name: C6a Sample Location/Comments: CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:06	pH = 2
Anions by IC	28	May-29-18 07:06	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 07:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:06	pH = 2
Solids, TDS	7	May-08-18 07:06	pH = 6
TKN DA	28	May-29-18 07:06	pH = 2
TOC	28	May-29-18 07:06	pH = 2
Total Phosphorus DA	28	May-29-18 07:06	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-29** Sampled: **May-01-18 07:15** Matrix: **Water**

Sample Name: **C6b** Sample Location/Comments: **CR G (Nelson Road)**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:15	pH = 3
Anions by IC	28	May-29-18 07:15	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 07:15	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:15	pH = 3
Solids, TDS	7	May-08-18 07:15	pH = 5
TKN DA	28	May-29-18 07:15	pH = 3
TOC	28	May-29-18 07:15	pH = 3
Total Phosphorus DA	28	May-29-18 07:15	pH = 3

Sample ID: **1805005-30** Sampled: **May-01-18 07:48** Matrix: **Water**

Sample Name: **C7a** Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:48	pH = 2
Anions by IC	28	May-29-18 07:48	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 07:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:48	pH = 2
Solids, TDS	7	May-08-18 07:48	pH = 6
TKN DA	28	May-29-18 07:48	pH = 2
TOC	28	May-29-18 07:48	pH = 2
Total Phosphorus DA	28	May-29-18 07:48	pH = 2

Sample ID: **1805005-31** Sampled: **May-01-18 08:02** Matrix: **Water**

Sample Name: **C7b** Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:02	pH = 2
Anions by IC	28	May-29-18 08:02	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:02	pH = 2
Solids, TDS	7	May-08-18 08:02	pH = 5
TKN DA	28	May-29-18 08:02	pH = 2
TOC	28	May-29-18 08:02	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-31** Sampled: **May-01-18 08:02** Matrix: **Water**

Sample Name: **C7b**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 08:02	pH = 2

Sample ID: **1805005-32** Sampled: **May-01-18 07:39** Matrix: **Water**

Sample Name: **FB2**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:39	pH = 2
Anions by IC	28	May-29-18 07:39	pH = 4
Metals ICP-AES (w)	180	Oct-28-18 07:39	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:39	pH = 2
Solids, TDS	7	May-08-18 07:39	pH = 4
TKN DA	28	May-29-18 07:39	pH = 2
TOC	28	May-29-18 07:39	pH = 2
Total Phosphorus DA	28	May-29-18 07:39	pH = 2

Sample ID: **1805005-33** Sampled: **May-01-18 07:38** Matrix: **Water**

Sample Name: **C7 equip**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:38	pH = 2
Anions by IC	28	May-29-18 07:38	pH = 4
Metals ICP-AES (w)	180	Oct-28-18 07:38	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:38	pH = 2
Solids, TDS	7	May-08-18 07:38	pH = 4
TKN DA	28	May-29-18 07:38	pH = 2
TOC	28	May-29-18 07:38	pH = 2
Total Phosphorus DA	28	May-29-18 07:38	pH = 2

Sample ID: **1805005-34** Sampled: **May-01-18 08:02** Matrix: **Water**

Sample Name: **C7 Dup**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:02	pH = 2
Anions by IC	28	May-29-18 08:02	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-34** Sampled: **May-01-18 08:02** Matrix: **Water**

Sample Name: **C7 Dup**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 08:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:02	pH = 2
Solids, TDS	7	May-08-18 08:02	pH = 5
TKN DA	28	May-29-18 08:02	pH = 2
TOC	28	May-29-18 08:02	pH = 2
Total Phosphorus DA	28	May-29-18 08:02	pH = 2

Sample ID: **1805005-35** Sampled: **May-01-18 08:35** Matrix: **Water**

Sample Name: **C8a**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:35	pH = 2
Anions by IC	28	May-29-18 08:35	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:35	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:35	pH = 2
Solids, TDS	7	May-08-18 08:35	pH = 5
TKN DA	28	May-29-18 08:35	pH = 2
TOC	28	May-29-18 08:35	pH = 2
Total Phosphorus DA	28	May-29-18 08:35	pH = 2

Sample ID: **1805005-36** Sampled: **May-01-18 08:42** Matrix: **Water**

Sample Name: **C8b**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:42	pH = 2
Anions by IC	28	May-29-18 08:42	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:42	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:42	pH = 2
Solids, TDS	7	May-08-18 08:42	pH = 5
TKN DA	28	May-29-18 08:42	pH = 2
TOC	28	May-29-18 08:42	pH = 2
Total Phosphorus DA	28	May-29-18 08:42	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-37** Sampled: **May-01-18 10:00** Matrix: **Water**

Sample Name: **C9a**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 10:00	pH = 2
Anions by IC	28	May-29-18 10:00	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 10:00	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 10:00	pH = 2
Solids, TDS	7	May-08-18 10:00	pH = 5
TKN DA	28	May-29-18 10:00	pH = 2
TOC	28	May-29-18 10:00	pH = 2
Total Phosphorus DA	28	May-29-18 10:00	pH = 2

Sample ID: **1805005-38** Sampled: **May-01-18 10:21** Matrix: **Water**

Sample Name: **C9b**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 10:21	pH = 2
Anions by IC	28	May-29-18 10:21	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 10:21	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 10:21	pH = 2
Solids, TDS	7	May-08-18 10:21	pH = 5
TKN DA	28	May-29-18 10:21	pH = 2
TOC	28	May-29-18 10:21	pH = 2
Total Phosphorus DA	28	May-29-18 10:21	pH = 2

Sample ID: **1805005-39** Sampled: **May-01-18 11:05** Matrix: **Water**

Sample Name: **C10a**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:05	pH = 2
Anions by IC	28	May-29-18 11:05	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 11:05	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:05	pH = 2
Solids, TDS	7	May-08-18 11:05	pH = 6
TKN DA	28	May-29-18 11:05	pH = 2
TOC	28	May-29-18 11:05	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-39** Sampled: **May-01-18 11:05** Matrix: **Water**

Sample Name: **C10a**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 11:05	pH = 2

Sample ID: **1805005-40** Sampled: **May-01-18 11:12** Matrix: **Water**

Sample Name: **C10b**

Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:12	pH = 2
Anions by IC	28	May-29-18 11:12	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 11:12	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:12	pH = 2
Solids, TDS	7	May-08-18 11:12	pH = 5
TKN DA	28	May-29-18 11:12	pH = 2
TOC	28	May-29-18 11:12	pH = 2
Total Phosphorus DA	28	May-29-18 11:12	pH = 2

Sample ID: **1805005-41** Sampled: **May-01-18 11:46** Matrix: **Water**

Sample Name: **C11a**

Sample Location/Comments: **20th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:46	pH = 3
Anions by IC	28	May-29-18 11:46	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 11:46	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:46	pH = 3
Solids, TDS	7	May-08-18 11:46	pH = 6
TKN DA	28	May-29-18 11:46	pH = 3
TOC	28	May-29-18 11:46	pH = 3
Total Phosphorus DA	28	May-29-18 11:46	pH = 3

Sample ID: **1805005-42** Sampled: **May-01-18 11:52** Matrix: **Water**

Sample Name: **C11b**

Sample Location/Comments: **20th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:52	pH = 2
Anions by IC	28	May-29-18 11:52	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-42** Sampled: **May-01-18 11:52** Matrix: **Water**

Sample Name: **C11b** Sample Location/Comments: **20th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 11:52	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:52	pH = 2
Solids, TDS	7	May-08-18 11:52	pH = 5
TKN DA	28	May-29-18 11:52	pH = 2
TOC	28	May-29-18 11:52	pH = 2
Total Phosphorus DA	28	May-29-18 11:52	pH = 2

Sample ID: **1805005-43** Sampled: **May-01-18 12:41** Matrix: **Water**

Sample Name: **C12a** Sample Location/Comments: **19th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 12:41	pH = 2
Anions by IC	28	May-29-18 12:41	pH = 7
Metals ICP-AES (w)	180	Oct-28-18 12:41	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 12:41	pH = 2
Solids, TDS	7	May-08-18 12:41	pH = 7
TKN DA	28	May-29-18 12:41	pH = 2
TOC	28	May-29-18 12:41	pH = 2
Total Phosphorus DA	28	May-29-18 12:41	pH = 2

Sample ID: **1805005-44** Sampled: **May-01-18 12:47** Matrix: **Water**

Sample Name: **C12b** Sample Location/Comments: **19th Avenue**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 12:47	pH = 2
Anions by IC	28	May-29-18 12:47	pH = 7
Metals ICP-AES (w)	180	Oct-28-18 12:47	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 12:47	pH = 2
Solids, TDS	7	May-08-18 12:47	pH = 7
TKN DA	28	May-29-18 12:47	pH = 2
TOC	28	May-29-18 12:47	pH = 2
Total Phosphorus DA	28	May-29-18 12:47	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-45** Sampled: **May-01-18 13:30** Matrix: **Water**

Sample Name: **C13a** Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 13:30	pH = 3
Anions by IC	28	May-29-18 13:30	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 13:30	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 13:30	pH = 3
Solids, TDS	7	May-08-18 13:30	pH = 6
TKN DA	28	May-29-18 13:30	pH = 3
TOC	28	May-29-18 13:30	pH = 3
Total Phosphorus DA	28	May-29-18 13:30	pH = 3

Sample ID: **1805005-46** Sampled: **May-01-18 13:39** Matrix: **Water**

Sample Name: **C13b** Sample Location/Comments: **4th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 13:39	pH = 2
Anions by IC	28	May-29-18 13:39	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 13:39	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 13:39	pH = 2
Solids, TDS	7	May-08-18 13:39	pH = 5
TKN DA	28	May-29-18 13:39	pH = 2
TOC	28	May-29-18 13:39	pH = 2
Total Phosphorus DA	28	May-29-18 13:39	pH = 2

Sample ID: **1805005-47** Sampled: **May-01-18 14:19** Matrix: **Water**

Sample Name: **D1a** Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 14:19	pH = 2
Anions by IC	28	May-29-18 14:19	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 14:19	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 14:19	pH = 2
Solids, TDS	7	May-08-18 14:19	pH = 6
TKN DA	28	May-29-18 14:19	pH = 2
TOC	28	May-29-18 14:19	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: 1805005-47 Sampled: May-01-18 14:19 Matrix: Water

Sample Name: D1a Sample Location/Comments: 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 14:19	pH = 2

Sample ID: 1805005-48 Sampled: May-01-18 14:26 Matrix: Water

Sample Name: D1b Sample Location/Comments: 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 14:26	pH = 3
Anions by IC	28	May-29-18 14:26	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 14:26	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 14:26	pH = 3
Solids, TDS	7	May-08-18 14:26	pH = 5
TKN DA	28	May-29-18 14:26	pH = 3
TOC	28	May-29-18 14:26	pH = 3
Total Phosphorus DA	28	May-29-18 14:26	pH = 3

Sample ID: 1805005-49 Sampled: May-01-18 15:00 Matrix: Water

Sample Name: D2a Sample Location/Comments: 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:00	pH = 3
Anions by IC	28	May-29-18 15:00	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 15:00	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:00	pH = 3
Solids, TDS	7	May-08-18 15:00	pH = 6
TKN DA	28	May-29-18 15:00	pH = 3
TOC	28	May-29-18 15:00	pH = 3
Total Phosphorus DA	28	May-29-18 15:00	pH = 3

Sample ID: 1805005-50 Sampled: May-01-18 15:06 Matrix: Water

Sample Name: D2b Sample Location/Comments: 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:06	pH = 2
Anions by IC	28	May-29-18 15:06	pH = 6

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-50** Sampled: **May-01-18 15:06** Matrix: **Water**

Sample Name: **D2b** Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 15:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:06	pH = 2
Solids, TDS	7	May-08-18 15:06	pH = 6
TKN DA	28	May-29-18 15:06	pH = 2
TOC	28	May-29-18 15:06	pH = 2
Total Phosphorus DA	28	May-29-18 15:06	pH = 2

Sample ID: **1805005-51** Sampled: **May-01-18 15:41** Matrix: **Water**

Sample Name: **D3a** Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:41	pH = 2
Anions by IC	28	May-29-18 15:41	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 15:41	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:41	pH = 2
Solids, TDS	7	May-08-18 15:41	pH = 6
TKN DA	28	May-29-18 15:41	pH = 2
TOC	28	May-29-18 15:41	pH = 2
Total Phosphorus DA	28	May-29-18 15:41	pH = 2

Sample ID: **1805005-52** Sampled: **May-01-18 15:48** Matrix: **Water**

Sample Name: **D3b** Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:48	pH = 2
Anions by IC	28	May-29-18 15:48	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 15:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:48	pH = 2
Solids, TDS	7	May-08-18 15:48	pH = 5
TKN DA	28	May-29-18 15:48	pH = 2
TOC	28	May-29-18 15:48	pH = 2
Total Phosphorus DA	28	May-29-18 15:48	pH = 2

WORK ORDER

Printed: 5/3/2018 3:33:25PM

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5**
 Project: **Central Sands**

Project Manager: **Angela Ockrassa Davis**
 Project Number: **[none]**

Sample ID: **1805005-53** Sampled: **May-01-18 16:19** Matrix: **Water**

Sample Name: **D4a**

Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 16:19	pH = 2
Anions by IC	28	May-29-18 16:19	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 16:19	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 16:19	pH = 2
Solids, TDS	7	May-08-18 16:19	pH = 6
TKN DA	28	May-29-18 16:19	pH = 2
TOC	28	May-29-18 16:19	pH = 2
Total Phosphorus DA	28	May-29-18 16:19	pH = 2

Sample ID: **1805005-54** Sampled: **May-01-18 16:26** Matrix: **Water**

Sample Name: **D4b**

Sample Location/Comments: **5th Street**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 16:26	pH = 2
Anions by IC	28	May-29-18 16:26	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 16:26	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 16:26	pH = 2
Solids, TDS	7	May-08-18 16:26	pH = 5
TKN DA	28	May-29-18 16:26	pH = 2
TOC	28	May-29-18 16:26	pH = 2
Total Phosphorus DA	28	May-29-18 16:26	pH = 2

WORK ORDER MEMO: NCR 14118

PROJECT COMMENTS: Anions: Chloride, fluoride, bromide, sulfate.
 Full List metals

REVIEWED

By Amanda Wroble at 3:35 pm, May 03, 2018

Reviewed By

Date

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ED_004625A_00002436-00026



Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A1a (1805005-01)

Matrix: Water

Sampled: Apr-30-18 07:19

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	11.9			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.462			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	51.4			0.200	"	"	"	"	"
Chromium	0.472			0.005	"	"	"	"	"
Cobalt	0.0270			0.006	"	"	"	"	"
Copper	0.316			0.0200	"	"	"	"	"
Iron	115			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	22.1			0.200	"	"	"	"	"
Manganese	2.11			0.008	"	"	"	"	"
Molybdenum	0.0219			0.0120	"	"	"	"	"
Nickel	0.120			0.0120	"	"	"	"	"
Potassium	5.99			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.81			0.400	"	"	"	"	"
Strontium	0.0951			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0529			0.006	"	"	"	"	"
Vanadium	0.0551			0.005	"	"	"	"	"
Zinc	0.436			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A1b (1805005-02)

Matrix: Water

Sampled: Apr-30-18 07:32

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	8.63			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.363			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	16.5			0.200	"	"	"	"	"
Chromium	0.403			0.005	"	"	"	"	"
Cobalt	0.0225			0.006	"	"	"	"	"
Copper	0.254			0.0200	"	"	"	"	"
Iron	43.1			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	5.13			0.200	"	"	"	"	"
Manganese	1.03			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0694			0.0120	"	"	"	"	"
Potassium	3.11			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.14			0.400	"	"	"	"	"
Strontium	0.0829			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0316			0.006	"	"	"	"	"
Vanadium	0.0204			0.005	"	"	"	"	"
Zinc	0.291			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A2a (1805005-03)

Matrix: Water

Sampled: Apr-30-18 08:15

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	12.1			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.352			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	51.9			0.200	"	"	"	"	"
Chromium	0.453			0.005	"	"	"	"	"
Cobalt	0.0206			0.006	"	"	"	"	"
Copper	0.304			0.0200	"	"	"	"	"
Iron	98.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	24.6			0.200	"	"	"	"	"
Manganese	2.27			0.008	"	"	"	"	"
Molybdenum	0.0251			0.0120	"	"	"	"	"
Nickel	0.114			0.0120	"	"	"	"	"
Potassium	5.54			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.39			0.400	"	"	"	"	"
Strontium	0.0861			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0334			0.006	"	"	"	"	"
Vanadium	0.0490			0.005	"	"	"	"	"
Zinc	0.157			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A2b (1805005-04)

Matrix: Water

Sampled: Apr-30-18 08:24

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.05			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.394			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	174			0.200	"	"	"	"	"
Chromium	0.0351			0.005	"	"	"	"	"
Cobalt	U			0.006	"	"	"	"	"
Copper	0.0295			0.0200	"	"	"	"	"
Iron	30.7			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	72.2			0.200	"	"	"	"	"
Manganese	3.00			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0271			0.0120	"	"	"	"	"
Potassium	2.04			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.23			0.400	"	"	"	"	"
Strontium	0.139			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0375			0.006	"	"	"	"	"
Vanadium	0.0151			0.005	"	"	"	"	"
Zinc	0.0724			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A3a (1805005-05)

Matrix: Water

Sampled: Apr-30-18 09:06

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.89			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.203			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	78.8			0.200	"	"	"	"	"
Chromium	0.124			0.005	"	"	"	"	"
Cobalt	0.0107			0.006	"	"	"	"	"
Copper	0.123			0.0200	"	"	"	"	"
Iron	51.6			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	43.1			0.200	"	"	"	"	"
Manganese	2.26			0.008	"	"	"	"	"
Molybdenum	0.0154			0.0120	"	"	"	"	"
Nickel	0.0447			0.0120	"	"	"	"	"
Potassium	2.83			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.56			0.400	"	"	"	"	"
Strontium	0.0760			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0271	J		0.006	"	"	"	"	"
Vanadium	0.0258			0.005	"	"	"	"	"
Zinc	0.0846			0.0300	"	"	"	"	"



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Chicago Regional Laboratory

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Water Division, WECA Region 5
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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A3b (1805005-06)

Matrix: Water

Sampled: Apr-30-18 09:14

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	14.3			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.559			0.003	"	"	"	"	"
Beryllium	0.0022			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	27.5			0.200	"	"	"	"	"
Chromium	0.572			0.005	"	"	"	"	"
Cobalt	0.0410			0.006	"	"	"	"	"
Copper	0.336			0.0200	"	"	"	"	"
Iron	81.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	9.70			0.200	"	"	"	"	"
Manganese	2.45			0.008	"	"	"	"	"
Molybdenum	0.0138			0.0120	"	"	"	"	"
Nickel	0.117			0.0120	"	"	"	"	"
Potassium	5.23			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.20			0.400	"	"	"	"	"
Strontium	0.0934			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0367			0.006	"	"	"	"	"
Vanadium	0.0241			0.005	"	"	"	"	"
Zinc	0.299			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A4 Equip (1805005-07)

Matrix: Water

Sampled: Apr-30-18 09:38

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	U			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	U			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	0.240			0.200	"	"	"	"	"
Chromium	U			0.005	"	"	"	"	"
Cobalt	U			0.006	"	"	"	"	"
Copper	U			0.0200	"	"	"	"	"
Iron	0.0981			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	U			0.200	"	"	"	"	"
Manganese	U			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	U			0.0120	"	"	"	"	"
Potassium	U			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	U			0.400	"	"	"	"	"
Strontium	U			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	U			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A3a (Dup) (1805005-08)

Matrix: Water

Sampled: Apr-30-18 09:06

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.62			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.264			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	84.6			0.200	"	"	"	"	"
Chromium	0.114			0.005	"	"	"	"	"
Cobalt	0.0113			0.006	"	"	"	"	"
Copper	0.0952			0.0200	"	"	"	"	"
Iron	57.3			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	45.7			0.200	"	"	"	"	"
Manganese	2.22			0.008	"	"	"	"	"
Molybdenum	0.0192			0.0120	"	"	"	"	"
Nickel	0.0554			0.0120	"	"	"	"	"
Potassium	3.51			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.79			0.400	"	"	"	"	"
Strontium	0.0874			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0314			0.006	"	"	"	"	"
Vanadium	0.0251			0.005	"	"	"	"	"
Zinc	0.0866			0.0300	"	"	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

FB1 (1805005-09)

Matrix: Water

Sampled: Apr-30-18 09:49

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	U			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	U			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	U			0.200	"	"	"	"	"
Chromium	U			0.005	"	"	"	"	"
Cobalt	U			0.006	"	"	"	"	"
Copper	U			0.0200	"	"	"	"	"
Iron	U			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	U			0.200	"	"	"	"	"
Manganese	U			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	U			0.0120	"	"	"	"	"
Potassium	U			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	U			0.400	"	"	"	"	"
Strontium	U			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	U			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A4a (1805005-10)

Matrix: Water

Sampled: Apr-30-18 09:58

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	7.10			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.309			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	22.1			0.200	"	"	"	"	"
Chromium	0.160			0.005	"	"	"	"	"
Cobalt	0.0186			0.006	"	"	"	"	"
Copper	0.225			0.0200	"	"	"	"	"
Iron	38.3			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	6.73			0.200	"	"	"	"	"
Manganese	0.757			0.008	"	"	"	"	"
Molybdenum	0.0127			0.0120	"	"	"	"	"
Nickel	0.0673			0.0120	"	"	"	"	"
Potassium	3.69			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.25			0.400	"	"	"	"	"
Strontium	0.0756			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0134			0.006	"	"	"	"	"
Vanadium	0.0557			0.005	"	"	"	"	"
Zinc	0.0438			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

A4b (1805005-11)

Matrix: Water

Sampled: Apr-30-18 10:09

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	8.64			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.342			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	17.0			0.200	"	"	"	"	"
Chromium	0.208			0.005	"	"	"	"	"
Cobalt	0.0135			0.006	"	"	"	"	"
Copper	0.132			0.0200	"	"	"	"	"
Iron	30.7			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	7.30			0.200	"	"	"	"	"
Manganese	1.45			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0506			0.0120	"	"	"	"	"
Potassium	3.74			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.56			0.400	"	"	"	"	"
Strontium	0.138			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0298	J		0.006	"	"	"	"	"
Vanadium	0.0399			0.005	"	"	"	"	"
Zinc	0.0830			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B1a (1805005-12)

Matrix: Water

Sampled: Apr-30-18 10:51

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.23			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.213			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	50.1			0.200	"	"	"	"	"
Chromium	0.0737			0.005	"	"	"	"	"
Cobalt	0.0076			0.006	"	"	"	"	"
Copper	0.116			0.0200	"	"	"	"	"
Iron	31.2			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	27.2			0.200	"	"	"	"	"
Manganese	0.963			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0299			0.0120	"	"	"	"	"
Potassium	2.14			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.75			0.400	"	"	"	"	"
Strontium	0.0573			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0144			0.006	"	"	"	"	"
Vanadium	0.0200			0.005	"	"	"	"	"
Zinc	0.0663			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B1b (1805005-13)

Matrix: Water

Sampled: Apr-30-18 10:58

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	8.26			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.605			0.003	"	"	"	"	"
Beryllium	0.0023			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	28.6			0.200	"	"	"	"	"
Chromium	0.358			0.005	"	"	"	"	"
Cobalt	0.0312			0.006	"	"	"	"	"
Copper	0.498			0.0200	"	"	"	"	"
Iron	88.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	9.79			0.200	"	"	"	"	"
Manganese	0.913			0.008	"	"	"	"	"
Molybdenum	0.0260			0.0120	"	"	"	"	"
Nickel	0.109			0.0120	"	"	"	"	"
Potassium	5.17			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.50			0.400	"	"	"	"	"
Strontium	0.103			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0217			0.006	"	"	"	"	"
Vanadium	0.0966			0.005	"	"	"	"	"
Zinc	0.226			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B2a (1805005-14)

Matrix: Water

Sampled: Apr-30-18 11:40

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	4.87			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.318			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	52.0			0.200	"	"	"	"	"
Chromium	0.250			0.005	"	"	"	"	"
Cobalt	0.0149			0.006	"	"	"	"	"
Copper	0.0849			0.0200	"	"	"	"	"
Iron	82.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	25.8			0.200	"	"	"	"	"
Manganese	1.59			0.008	"	"	"	"	"
Molybdenum	0.0215			0.0120	"	"	"	"	"
Nickel	0.0957			0.0120	"	"	"	"	"
Potassium	5.76			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	5.05			0.400	"	"	"	"	"
Strontium	0.0848			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0399			0.006	"	"	"	"	"
Vanadium	0.0179			0.005	"	"	"	"	"
Zinc	0.0792			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B2b (1805005-15)

Matrix: Water

Sampled: Apr-30-18 11:48

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	14.6			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.394			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	11.1			0.200	"	"	"	"	"
Chromium	0.289			0.005	"	"	"	"	"
Cobalt	0.0161			0.006	"	"	"	"	"
Copper	0.124			0.0200	"	"	"	"	"
Iron	39.1			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	4.22			0.200	"	"	"	"	"
Manganese	0.553			0.008	"	"	"	"	"
Molybdenum	0.0165			0.0120	"	"	"	"	"
Nickel	0.0536			0.0120	"	"	"	"	"
Potassium	3.05			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.17			0.400	"	"	"	"	"
Strontium	0.0454			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0642			0.006	"	"	"	"	"
Vanadium	0.0309			0.005	"	"	"	"	"
Zinc	0.0893			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B3a (1805005-16)

Matrix: Water

Sampled: Apr-30-18 12:29

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	9.09			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.350			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	36.3			0.200	"	"	"	"	"
Chromium	0.220			0.005	"	"	"	"	"
Cobalt	0.0440			0.006	"	"	"	"	"
Copper	0.129			0.0200	"	"	"	"	"
Iron	35.0			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	8.67			0.200	"	"	"	"	"
Manganese	3.56			0.008	"	"	"	"	"
Molybdenum	0.0146			0.0120	"	"	"	"	"
Nickel	0.0658			0.0120	"	"	"	"	"
Potassium	3.76			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.13			0.400	"	"	"	"	"
Strontium	0.237			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0181			0.006	"	"	"	"	"
Vanadium	0.0276			0.005	"	"	"	"	"
Zinc	0.106			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B3b (1805005-17)

Matrix: Water

Sampled: Apr-30-18 12:36

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	15.3			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.637			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	12.1			0.200	"	"	"	"	"
Chromium	0.543			0.005	"	"	"	"	"
Cobalt	0.0362			0.006	"	"	"	"	"
Copper	0.258			0.0200	"	"	"	"	"
Iron	87.1			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	2.91			0.200	"	"	"	"	"
Manganese	2.23			0.008	"	"	"	"	"
Molybdenum	0.0207			0.0120	"	"	"	"	"
Nickel	0.114			0.0120	"	"	"	"	"
Potassium	5.97			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.14			0.400	"	"	"	"	"
Strontium	0.103			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0437			0.006	"	"	"	"	"
Vanadium	0.0176			0.005	"	"	"	"	"
Zinc	0.201			0.0300	"	"	"	"	"



Environmental Protection Agency Region 5
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Water Division, WECA Region 5
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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B4a (1805005-18)

Matrix: Water

Sampled: Apr-30-18 13:10

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	1.44			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.289			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0596			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	95.7			0.200	"	"	"	"	"
Chromium	0.0720			0.005	"	"	"	"	"
Cobalt	0.0241			0.006	"	"	"	"	"
Copper	0.0549			0.0200	"	"	"	"	"
Iron	19.0			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	34.5			0.200	"	"	"	"	"
Manganese	4.04			0.008	"	"	"	"	"
Molybdenum	0.0128			0.0120	"	"	"	"	"
Nickel	0.0526			0.0120	"	"	"	"	"
Potassium	3.85			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	11.7			0.400	"	"	"	"	"
Strontium	0.478			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0173			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	0.0418			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

B4b (1805005-19)

Matrix: Water

Sampled: Apr-30-18 13:41

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	7.92			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.268			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0626			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	73.3			0.200	"	"	"	"	"
Chromium	0.682			0.005	"	"	"	"	"
Cobalt	0.0178			0.006	"	"	"	"	"
Copper	0.216			0.0200	"	"	"	"	"
Iron	93.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	23.4			0.200	"	"	"	"	"
Manganese	1.80			0.008	"	"	"	"	"
Molybdenum	0.0388			0.0120	"	"	"	"	"
Nickel	0.140			0.0120	"	"	"	"	"
Potassium	16.0			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	10.8			0.400	"	"	"	"	"
Strontium	0.214			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0363			0.006	"	"	"	"	"
Vanadium	0.0149			0.005	"	"	"	"	"
Zinc	0.247			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C1a (1805005-20)

Matrix: Water

Sampled: Apr-30-18 15:02

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	9.08			0.200	mg/L	1	B18E013	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.329			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	13.3			0.200	"	"	"	"	"
Chromium	0.0804			0.005	"	"	"	"	"
Cobalt	0.0406			0.006	"	"	"	"	"
Copper	0.0528			0.0200	"	"	"	"	"
Iron	14.0			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	2.74			0.200	"	"	"	"	"
Manganese	1.15			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0266			0.0120	"	"	"	"	"
Potassium	2.18			0.800	"	"	"	"	"
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	1.90			0.400	"	"	"	"	"
Strontium	0.0967			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0401			0.006	"	"	"	"	"
Vanadium	0.0226			0.005	"	"	"	"	"
Zinc	0.0307			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C1b (1805005-21)

Matrix: Water

Sampled: Apr-30-18 15:27

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	15.8			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	1.22			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	21.2			0.200	"	"	"	"	May-14-18
Chromium	0.0667			0.005	"	"	"	"	May-09-18
Cobalt	0.0603			0.006	"	"	"	"	"
Copper	0.0505			0.0200	"	"	"	"	"
Iron	13.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	5.35			0.200	"	"	"	"	"
Manganese	1.87			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0231			0.0120	"	"	"	"	May-14-18
Potassium	2.79			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.57			0.400	"	"	"	"	"
Strontium	0.116			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0810	J		0.006	"	"	"	"	"
Vanadium	0.0482			0.005	"	"	"	"	"
Zinc	0.0583			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C2a (1805005-22)

Matrix: Water

Sampled: Apr-30-18 16:06

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	4.65			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.348			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0770			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	49.4			0.200	"	"	"	"	May-14-18
Chromium	0.0718			0.005	"	"	"	"	May-09-18
Cobalt	0.0217			0.006	"	"	"	"	"
Copper	0.0462			0.0200	"	"	"	"	"
Iron	12.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	18.1			0.200	"	"	"	"	"
Manganese	4.01			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0283			0.0120	"	"	"	"	May-14-18
Potassium	17.6			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	7.26			0.400	"	"	"	"	"
Strontium	0.617			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0249			0.006	"	"	"	"	"
Vanadium	0.0063			0.005	"	"	"	"	"
Zinc	0.0301			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C2b (1805005-23)

Matrix: Water

Sampled: Apr-30-18 16:14

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	16.6			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.882			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	14.7			0.200	"	"	"	"	May-14-18
Chromium	0.395			0.005	"	"	"	"	May-09-18
Cobalt	0.0611			0.006	"	"	"	"	"
Copper	0.187			0.0200	"	"	"	"	"
Iron	53.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	5.02			0.200	"	"	"	"	"
Manganese	9.53			0.008	"	"	"	"	"
Molybdenum	0.0234			0.0120	"	"	"	"	"
Nickel	0.107			0.0120	"	"	"	"	May-14-18
Potassium	8.67			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.07			0.400	"	"	"	"	"
Strontium	0.133			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0374			0.006	"	"	"	"	"
Vanadium	0.0083			0.005	"	"	"	"	"
Zinc	0.0886			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C3a (1805005-24)

Matrix: Water

Sampled: Apr-30-18 14:16

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	5.94			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.670			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	57.9			0.200	"	"	"	"	May-14-18
Chromium	0.260			0.005	"	"	"	"	May-09-18
Cobalt	0.0452			0.006	"	"	"	"	"
Copper	0.157			0.0200	"	"	"	"	"
Iron	31.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	10.1			0.200	"	"	"	"	"
Manganese	14.3			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0849			0.0120	"	"	"	"	May-14-18
Potassium	4.24			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.60			0.400	"	"	"	"	"
Strontium	0.506			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0449			0.006	"	"	"	"	"
Vanadium	0.0089			0.005	"	"	"	"	"
Zinc	0.120			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C3b (1805005-25)

Matrix: Water

Sampled: Apr-30-18 14:26

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.21			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.119			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	6.12			0.200	"	"	"	"	May-14-18
Chromium	0.0557			0.005	"	"	"	"	May-09-18
Cobalt	U			0.006	"	"	"	"	"
Copper	0.0277			0.0200	"	"	"	"	"
Iron	6.76			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	1.39			0.200	"	"	"	"	"
Manganese	0.786			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0137			0.0120	"	"	"	"	May-14-18
Potassium	1.78			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.84			0.400	"	"	"	"	"
Strontium	0.0451			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0131			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C5Aa (1805005-26)

Matrix: Water

Sampled: May-01-18 06:29

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	5.94			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.179			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0797			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	67.2			0.200	"	"	"	"	May-14-18
Chromium	0.104			0.005	"	"	"	"	May-09-18
Cobalt	0.0241			0.006	"	"	"	"	"
Copper	0.0573			0.0200	"	"	"	"	"
Iron	15.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	20.6			0.200	"	"	"	"	"
Manganese	3.86			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0330			0.0120	"	"	"	"	May-14-18
Potassium	15.5			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	12.2			0.400	"	"	"	"	"
Strontium	0.138			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0417			0.006	"	"	"	"	"
Vanadium	0.0182			0.005	"	"	"	"	"
Zinc	0.151			0.0300	"	"	"	"	"



Environmental Protection Agency Region 5
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Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C5Ab (1805005-27)

Matrix: Water

Sampled: May-01-18 06:43

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	26.7			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.399			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0660			0.0500	"	"	"	"	"
Cadmium	0.0022			0.002	"	"	"	"	"
Calcium	78.4			0.200	"	"	"	"	May-14-18
Chromium	1.05			0.005	"	"	"	"	May-09-18
Cobalt	0.0612			0.006	"	"	"	"	"
Copper	0.430			0.0200	"	"	"	"	"
Iron	126			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	31.2			0.200	"	"	"	"	"
Manganese	8.11			0.008	"	"	"	"	"
Molybdenum	0.0313			0.0120	"	"	"	"	"
Nickel	0.229			0.0120	"	"	"	"	May-14-18
Potassium	30.0			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	21.5			0.400	"	"	"	"	"
Strontium	0.250			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0598			0.006	"	"	"	"	"
Vanadium	0.0219			0.005	"	"	"	"	"
Zinc	1.54			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C6a (1805005-28)

Matrix: Water

Sampled: May-01-18 07:06

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	2.78			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.503			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0590			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	105			0.200	"	"	"	"	May-14-18
Chromium	0.144			0.005	"	"	"	"	May-09-18
Cobalt	0.0248			0.006	"	"	"	"	"
Copper	0.106			0.0200	"	"	"	"	"
Iron	21.1			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	47.3			0.200	"	"	"	"	"
Manganese	9.64			0.008	"	"	"	"	"
Molybdenum	0.0137			0.0120	"	"	"	"	"
Nickel	0.0572			0.0120	"	"	"	"	May-14-18
Potassium	14.5			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	10.8			0.400	"	"	"	"	"
Strontium	0.601			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0292			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	0.0682			0.0300	"	"	"	"	"



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Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C6b (1805005-29)

Matrix: Water

Sampled: May-01-18 07:15

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	13.0			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.284			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0864			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	56.4			0.200	"	"	"	"	May-14-18
Chromium	0.463			0.005	"	"	"	"	May-09-18
Cobalt	0.0523			0.006	"	"	"	"	"
Copper	0.186			0.0200	"	"	"	"	"
Iron	54.8			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	25.9			0.200	"	"	"	"	"
Manganese	10.7			0.008	"	"	"	"	"
Molybdenum	0.0247			0.0120	"	"	"	"	"
Nickel	0.0904			0.0120	"	"	"	"	May-14-18
Potassium	21.2			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	10.3			0.400	"	"	"	"	"
Strontium	0.167			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0771			0.006	"	"	"	"	"
Vanadium	0.0144			0.005	"	"	"	"	"
Zinc	0.164			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C7a (1805005-30)

Matrix: Water

Sampled: May-01-18 07:48

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	2.72			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.782			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	138			0.200	"	"	"	"	May-14-18
Chromium	0.0871			0.005	"	"	"	"	May-09-18
Cobalt	0.0296			0.006	"	"	"	"	"
Copper	0.0937			0.0200	"	"	"	"	"
Iron	19.6			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	59.1			0.200	"	"	"	"	"
Manganese	9.90			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0756			0.0120	"	"	"	"	May-14-18
Potassium	24.1			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.93			0.400	"	"	"	"	"
Strontium	0.526			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0539			0.006	"	"	"	"	"
Vanadium	0.0067			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C7b (1805005-31)

Matrix: Water

Sampled: May-01-18 08:02

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	9.14			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.363			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0811			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	81.6			0.200	"	"	"	"	May-14-18
Chromium	0.744			0.005	"	"	"	"	May-09-18
Cobalt	0.0397			0.006	"	"	"	"	"
Copper	0.267			0.0200	"	"	"	"	"
Iron	91.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	36.6			0.200	"	"	"	"	"
Manganese	11.6			0.008	"	"	"	"	"
Molybdenum	0.0413			0.0120	"	"	"	"	"
Nickel	0.169			0.0120	"	"	"	"	May-14-18
Potassium	24.1			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	13.0			0.400	"	"	"	"	"
Strontium	0.208			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0516			0.006	"	"	"	"	"
Vanadium	0.0118			0.005	"	"	"	"	"
Zinc	0.314			0.0300	"	"	"	"	"



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Project: Central Sands
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Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

FB2 (1805005-32)

Matrix: Water

Sampled: May-01-18 07:39

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	U			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	U			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	U			0.200	"	"	"	"	"
Chromium	U			0.005	"	"	"	"	"
Cobalt	U			0.006	"	"	"	"	"
Copper	U			0.0200	"	"	"	"	"
Iron	U			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	U			0.200	"	"	"	"	"
Manganese	U			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	U			0.0120	"	"	"	"	May-14-18
Potassium	U			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	U			0.400	"	"	"	"	"
Strontium	U			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	U			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C7 equip (1805005-33)

Matrix: Water

Sampled: May-01-18 07:38

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	U			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	U			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	U			0.200	"	"	"	"	"
Chromium	U			0.005	"	"	"	"	"
Cobalt	U			0.006	"	"	"	"	"
Copper	U			0.0200	"	"	"	"	"
Iron	U			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	U			0.200	"	"	"	"	"
Manganese	U			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	U			0.0120	"	"	"	"	May-14-18
Potassium	U			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	U			0.400	"	"	"	"	"
Strontium	U			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	U			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C7b Dup (1805005-34)

Matrix: Water

Sampled: May-01-18 08:02

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	5.41			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.210			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0946			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	58.3	L		0.200	"	"	"	"	"
Chromium	0.200			0.005	"	"	"	"	"
Cobalt	0.0201			0.006	"	"	"	"	"
Copper	0.0859			0.0200	"	"	"	"	"
Iron	24.0			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	26.4			0.200	"	"	"	"	"
Manganese	7.64			0.008	"	"	"	"	"
Molybdenum	0.0126			0.0120	"	"	"	"	"
Nickel	0.0506			0.0120	"	"	"	"	May-14-18
Potassium	19.5			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	11.9			0.400	"	"	"	"	"
Strontium	0.148			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0357			0.006	"	"	"	"	"
Vanadium	0.0073			0.005	"	"	"	"	"
Zinc	0.0555			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C8a (1805005-35)

Matrix: Water

Sampled: May-01-18 08:35

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	10.3			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.599			0.003	"	"	"	"	"
Beryllium	0.0027			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	36.5	L		0.200	"	"	"	"	"
Chromium	0.110			0.005	"	"	"	"	"
Cobalt	0.0240			0.006	"	"	"	"	"
Copper	0.139			0.0200	"	"	"	"	"
Iron	18.9			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	12.6			0.200	"	"	"	"	"
Manganese	12.2			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0538			0.0120	"	"	"	"	May-14-18
Potassium	5.35			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	6.22			0.400	"	"	"	"	"
Strontium	0.177			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0436			0.006	"	"	"	"	"
Vanadium	0.0162			0.005	"	"	"	"	"
Zinc	0.0555			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C8b (1805005-36)

Matrix: Water

Sampled: May-01-18 08:42

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	13.7			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.395			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	11.5	L		0.200	"	"	"	"	"
Chromium	0.208			0.005	"	"	"	"	"
Cobalt	0.0218			0.006	"	"	"	"	"
Copper	0.0715			0.0200	"	"	"	"	"
Iron	24.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	4.02			0.200	"	"	"	"	"
Manganese	3.74			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0340			0.0120	"	"	"	"	May-14-18
Potassium	5.28			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.24			0.400	"	"	"	"	"
Strontium	0.0638			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0446			0.006	"	"	"	"	"
Vanadium	0.0125			0.005	"	"	"	"	"
Zinc	0.0880			0.0300	"	"	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Water Division, WECA Region 5
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Chicago IL, 60604

Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C9a (1805005-37)

Matrix: Water

Sampled: May-01-18 10:00

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	10.9			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.481			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	16.1			0.200	"	"	"	"	"
Chromium	0.696			0.005	"	"	"	"	"
Cobalt	0.0400			0.006	"	"	"	"	"
Copper	0.479			0.0200	"	"	"	"	"
Iron	73.1			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	4.78			0.200	"	"	"	"	"
Manganese	3.45			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.181			0.0120	"	"	"	"	May-14-18
Potassium	10.9			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.34			0.400	"	"	"	"	"
Strontium	0.234			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0370			0.006	"	"	"	"	"
Vanadium	0.0073			0.005	"	"	"	"	"
Zinc	1.29			0.0300	"	"	"	"	"



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Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C9b (1805005-38)

Matrix: Water

Sampled: May-01-18 10:21

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	13.3			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.337			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	3.82			0.200	"	"	"	"	"
Chromium	0.0354			0.005	"	"	"	"	"
Cobalt	0.0223			0.006	"	"	"	"	"
Copper	0.0464			0.0200	"	"	"	"	"
Iron	10.6			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	1.19			0.200	"	"	"	"	"
Manganese	2.11			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0262			0.0120	"	"	"	"	May-14-18
Potassium	4.43			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	1.23			0.400	"	"	"	"	"
Strontium	0.0294			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.112			0.006	"	"	"	"	"
Vanadium	0.0341			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C10a (1805005-39)

Matrix: Water

Sampled: May-01-18 11:05

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	2.47			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.302			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	100			0.200	"	"	"	"	"
Chromium	0.0219			0.005	"	"	"	"	"
Cobalt	0.0201			0.006	"	"	"	"	"
Copper	0.0692			0.0200	"	"	"	"	"
Iron	9.52			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	54.3			0.200	"	"	"	"	"
Manganese	3.18			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0332			0.0120	"	"	"	"	May-14-18
Potassium	1.98			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.57			0.400	"	"	"	"	"
Strontium	0.123			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0246			0.006	"	"	"	"	"
Vanadium	0.0100			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C10b (1805005-40)

Matrix: Water

Sampled: May-01-18 11:12

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	14.1			0.200	mg/L	1	B18E014	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.599			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	60.0			0.200	"	"	"	"	"
Chromium	0.464			0.005	"	"	"	"	"
Cobalt	0.0364			0.006	"	"	"	"	"
Copper	0.294			0.0200	"	"	"	"	"
Iron	83.8			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	22.1			0.200	"	"	"	"	"
Manganese	3.84			0.008	"	"	"	"	"
Molybdenum	0.0234			0.0120	"	"	"	"	"
Nickel	0.141			0.0120	"	"	"	"	May-14-18
Potassium	7.81			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	5.22			0.400	"	"	"	"	"
Strontium	0.387			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0550			0.006	"	"	"	"	"
Vanadium	0.0275			0.005	"	"	"	"	"
Zinc	0.144			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C11a (1805005-41)

Matrix: Water

Sampled: May-01-18 11:46

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.67			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.171			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	65.4			0.200	"	"	"	"	"
Chromium	0.0675			0.005	"	"	"	"	"
Cobalt	0.0081			0.006	"	"	"	"	"
Copper	0.113	K		0.0200	"	"	"	"	"
Iron	40.2			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	33.7			0.200	"	"	"	"	"
Manganese	1.58			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0308			0.0120	"	"	"	"	May-14-18
Potassium	2.07			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.65			0.400	"	"	"	"	"
Strontium	0.0575			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0293			0.006	"	"	"	"	"
Vanadium	0.0284			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C11b (1805005-42)

Matrix: Water

Sampled: May-01-18 11:52

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	10.7			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.416			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	35.1			0.200	"	"	"	"	"
Chromium	0.288			0.005	"	"	"	"	"
Cobalt	0.0290			0.006	"	"	"	"	"
Copper	0.222			0.0200	"	"	"	"	"
Iron	61.7			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	13.8			0.200	"	"	"	"	"
Manganese	2.35			0.008	"	"	"	"	"
Molybdenum	0.0206			0.0120	"	"	"	"	"
Nickel	0.0876			0.0120	"	"	"	"	May-14-18
Potassium	5.58			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.48			0.400	"	"	"	"	"
Strontium	0.124			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0300			0.006	"	"	"	"	"
Vanadium	0.0355			0.005	"	"	"	"	"
Zinc	0.0730			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C12a (1805005-43)

Matrix: Water

Sampled: May-01-18 12:41

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	5.50			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	1.34			0.003	"	"	"	"	"
Beryllium	0.0041			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	0.0025			0.002	"	"	"	"	"
Calcium	34.7			0.200	"	"	"	"	"
Chromium	0.167			0.005	"	"	"	"	"
Cobalt	0.0221			0.006	"	"	"	"	"
Copper	0.0775			0.0200	"	"	"	"	"
Iron	130			0.0800	"	"	"	"	"
Lead	0.0534			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	12.5			0.200	"	"	"	"	"
Manganese	1.83			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0958			0.0120	"	"	"	"	May-14-18
Potassium	3.08			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.05			0.400	"	"	"	"	"
Strontium	0.190			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0180			0.006	"	"	"	"	"
Vanadium	0.155			0.005	"	"	"	"	"
Zinc	0.0566			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C12b (1805005-44)

Matrix: Water

Sampled: May-01-18 12:47

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	5.05			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.776			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	0.0045			0.002	"	"	"	"	"
Calcium	69.1			0.200	"	"	"	"	"
Chromium	0.325			0.005	"	"	"	"	"
Cobalt	0.0146			0.006	"	"	"	"	"
Copper	0.148			0.0200	"	"	"	"	"
Iron	154			0.0800	"	"	"	"	"
Lead	0.0304			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	32.0			0.200	"	"	"	"	"
Manganese	12.8			0.008	"	"	"	"	"
Molybdenum	0.0479			0.0120	"	"	"	"	"
Nickel	0.118			0.0120	"	"	"	"	May-14-18
Potassium	3.42			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.27			0.400	"	"	"	"	"
Strontium	0.110			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0504			0.006	"	"	"	"	"
Vanadium	0.0726			0.005	"	"	"	"	"
Zinc	0.0396			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C13a (1805005-45)

Matrix: Water

Sampled: May-01-18 13:30

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.02			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.148			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	42.2			0.200	"	"	"	"	"
Chromium	0.0622			0.005	"	"	"	"	"
Cobalt	0.008			0.006	"	"	"	"	"
Copper	0.0784			0.0200	"	"	"	"	"
Iron	43.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	21.4			0.200	"	"	"	"	"
Manganese	0.887			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0290			0.0120	"	"	"	"	May-14-18
Potassium	0.873			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	1.88			0.400	"	"	"	"	"
Strontium	0.0637			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0136			0.006	"	"	"	"	"
Vanadium	0.0882			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

C13b (1805005-46)

Matrix: Water

Sampled: May-01-18 13:39

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	11.4			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.742			0.003	"	"	"	"	"
Beryllium	0.0029			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	0.0033			0.002	"	"	"	"	"
Calcium	23.0			0.200	"	"	"	"	"
Chromium	0.474			0.005	"	"	"	"	"
Cobalt	0.0186			0.006	"	"	"	"	"
Copper	0.146			0.0200	"	"	"	"	"
Iron	130			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	7.07			0.200	"	"	"	"	"
Manganese	1.08			0.008	"	"	"	"	"
Molybdenum	0.0389			0.0120	"	"	"	"	"
Nickel	0.149			0.0120	"	"	"	"	May-14-18
Potassium	6.50			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	3.91			0.400	"	"	"	"	"
Strontium	0.101			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0307			0.006	"	"	"	"	"
Vanadium	0.173			0.005	"	"	"	"	"
Zinc	0.136			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D1a (1805005-47)

Matrix: Water

Sampled: May-01-18 14:19

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	4.14			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.191			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	46.4			0.200	"	"	"	"	"
Chromium	0.106			0.005	"	"	"	"	"
Cobalt	0.0093			0.006	"	"	"	"	"
Copper	0.153			0.0200	"	"	"	"	"
Iron	39.2			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	24.8			0.200	"	"	"	"	"
Manganese	1.98			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0373			0.0120	"	"	"	"	May-14-18
Potassium	1.66			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.04			0.400	"	"	"	"	"
Strontium	0.0423			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0084			0.006	"	"	"	"	"
Vanadium	0.0909			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D1b (1805005-48)

Matrix: Water

Sampled: May-01-18 14:26

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	7.09			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.397			0.003	"	"	"	"	"
Beryllium	0.0023			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	0.0027			0.002	"	"	"	"	"
Calcium	19.8			0.200	"	"	"	"	"
Chromium	0.194			0.005	"	"	"	"	"
Cobalt	0.0120			0.006	"	"	"	"	"
Copper	0.110			0.0200	"	"	"	"	"
Iron	70.5			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	5.71			0.200	"	"	"	"	"
Manganese	0.646			0.008	"	"	"	"	"
Molybdenum	0.0185			0.0120	"	"	"	"	"
Nickel	0.0763			0.0120	"	"	"	"	May-14-18
Potassium	4.45			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	2.60			0.400	"	"	"	"	"
Strontium	0.0908			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0219			0.006	"	"	"	"	"
Vanadium	0.164			0.005	"	"	"	"	"
Zinc	0.0761			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D2a (1805005-49)

Matrix: Water

Sampled: May-01-18 15:00

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.32			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.234			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	86.7			0.200	"	"	"	"	"
Chromium	0.134			0.005	"	"	"	"	"
Cobalt	0.0075			0.006	"	"	"	"	"
Copper	0.101			0.0200	"	"	"	"	"
Iron	26.6			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium hi	42.5			0.200	"	"	"	"	"
Manganese	1.15			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0341			0.0120	"	"	"	"	May-14-18
Potassium	9.87			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	5.14			0.400	"	"	"	"	"
Strontium	0.157			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0341			0.006	"	"	"	"	"
Vanadium	0.0300			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D2b (1805005-50)

Matrix: Water

Sampled: May-01-18 15:06

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	8.45			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.154			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0669			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	62.6			0.200	"	"	"	"	"
Chromium	0.233			0.005	"	"	"	"	"
Cobalt	0.0178			0.006	"	"	"	"	"
Copper	0.119			0.0200	"	"	"	"	"
Iron	31.2			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	28.4			0.200	"	"	"	"	"
Manganese	0.697			0.008	"	"	"	"	"
Molybdenum	0.0209			0.0120	"	"	"	"	"
Nickel	0.0469			0.0120	"	"	"	"	May-14-18
Potassium	19.6			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	11.2			0.400	"	"	"	"	"
Strontium	0.138			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0272			0.006	"	"	"	"	"
Vanadium	0.0249			0.005	"	"	"	"	"
Zinc	0.0482			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D3a (1805005-51)

Matrix: Water

Sampled: May-01-18 15:41

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	8.42			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.314			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	56.3			0.200	"	"	"	"	"
Chromium	0.175			0.005	"	"	"	"	"
Cobalt	0.0358			0.006	"	"	"	"	"
Copper	0.133			0.0200	"	"	"	"	"
Iron	28.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	8.38			0.200	"	"	"	"	"
Manganese	4.28			0.008	"	"	"	"	"
Molybdenum	U			0.0120	"	"	"	"	"
Nickel	0.0703			0.0120	"	"	"	"	May-14-18
Potassium	3.44			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	5.72			0.400	"	"	"	"	"
Strontium	0.365			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0161			0.006	"	"	"	"	"
Vanadium	0.0198			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D3b (1805005-52)

Matrix: Water

Sampled: May-01-18 15:48

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	11.3			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.410			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	40.1			0.200	"	"	"	"	"
Chromium	0.232			0.005	"	"	"	"	"
Cobalt	0.0332			0.006	"	"	"	"	"
Copper	0.115			0.0200	"	"	"	"	"
Iron	32.4			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	9.29			0.200	"	"	"	"	"
Manganese	1.06			0.008	"	"	"	"	"
Molybdenum	0.0148			0.0120	"	"	"	"	"
Nickel	0.0474			0.0120	"	"	"	"	May-14-18
Potassium	3.60			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.14			0.400	"	"	"	"	"
Strontium	0.354			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0410			0.006	"	"	"	"	"
Vanadium	0.0352			0.005	"	"	"	"	"
Zinc	0.0335			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D4a (1805005-53)

Matrix: Water

Sampled: May-01-18 16:19

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	3.45			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.161			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	U			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	80.3			0.200	"	"	"	"	"
Chromium	0.131			0.005	"	"	"	"	"
Cobalt	0.0074			0.006	"	"	"	"	"
Copper	0.0762			0.0200	"	"	"	"	"
Iron	21.6			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	34.7			0.200	"	"	"	"	"
Manganese	0.546			0.008	"	"	"	"	"
Molybdenum	0.0150			0.0120	"	"	"	"	"
Nickel	0.0387			0.0120	"	"	"	"	May-14-18
Potassium	4.27			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	4.35			0.400	"	"	"	"	"
Strontium	0.419			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0140			0.006	"	"	"	"	"
Vanadium	U			0.005	"	"	"	"	"
Zinc	U			0.0300	"	"	"	"	"



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Reported:
May-29-18 10:55

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

D4b (1805005-54)

Matrix: Water

Sampled: May-01-18 16:26

Received: May-02-18 09:55

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	15.3			0.200	mg/L	1	B18E015	May-08-18	May-09-18
Antimony	U			0.0200	"	"	"	"	"
Arsenic	U			0.0400	"	"	"	"	"
Barium	0.266			0.003	"	"	"	"	"
Beryllium	U			0.002	"	"	"	"	"
Boron	0.0722			0.0500	"	"	"	"	"
Cadmium	U			0.002	"	"	"	"	"
Calcium	80.6			0.200	"	"	"	"	"
Chromium	0.564			0.005	"	"	"	"	"
Cobalt	0.0372			0.006	"	"	"	"	"
Copper	0.216			0.0200	"	"	"	"	"
Iron	75.8			0.0800	"	"	"	"	"
Lead	U			0.0300	"	"	"	"	"
Lithium	U			0.0250	"	"	"	"	"
Magnesium	32.7			0.200	"	"	"	"	"
Manganese	3.49			0.008	"	"	"	"	"
Molybdenum	0.0308			0.0120	"	"	"	"	"
Nickel	0.102			0.0120	"	"	"	"	May-14-18
Potassium	30.5			0.800	"	"	"	"	May-09-18
Selenium	U			0.0500	"	"	"	"	"
Silver	U			0.0100	"	"	"	"	"
Sodium	16.6			0.400	"	"	"	"	"
Strontium	0.229			0.003	"	"	"	"	"
Thallium	U			0.0600	"	"	"	"	"
Tin	U			0.0200	"	"	"	"	"
Titanium	0.0638			0.006	"	"	"	"	"
Vanadium	0.0329			0.005	"	"	"	"	"
Zinc	0.0484			0.0300	"	"	"	"	"



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Project: Central Sands
Project Number: CB022018
Project Manager: Cheryl Burdett

Reported:
May-29-18 10:55

Notes and Definitions

- L The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
- K The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- U Not Detected
- NR Not Reported
- Q QC limit Exceeded